AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-31 (Canceled)

32. (Currently Amended) A process for forming an intermediate preform for manufacturing a microstructured optical fibre, comprising:

providing a cylindrical mould defining a central axis, said mould comprising a cylindrical container wall, a first base and a removable second base;

arranging within said mould a plurality of hole generating elements, thereby defining internal structural elements of the intermediate preform;

inserting a fluid optical polymer material or polymer precursor in the mould;

consolidating the fluid polymer material or polymer precursor so as to obtain a solid cylindrical polymer body defining the intermediate preform and having embedded the hole generating elements, said hole generating elements being releasably fixed to said first and to said second base and comprising at least one hole generating element removable from said intermediate preform;

releasing said hole generating elements from said first and second base;

removing the second base from the mould;

removing the cylindrical intermediate preform from the mould, together with the therein embedded hole generating elements; and

removing said removable hole generating element for forming an elongated hole inside the intermediate preform by applying a load to said removable hole generating element, wherein said removable hole generating element has a diameter greater than 0.1 mm.

33. (Previously Presented) The process according to claim 32, wherein said removable hole generating element has a diameter between about 2 and 8 mm.

34. (Previously Presented) The process according to claim 33, further comprising, before inserting said polymer precursor in the mould, coating said removable hole generating element with a low adhesion layer.

35. (Previously Presented) The process according to claim 34, wherein said low adhesion layer is a tube arranged over the removable hole generating element.

36. (Previously Presented) The process according to claim 34, wherein said low adhesion layer comprises a low adhesion fluororesin.

37. (Previously Presented) The process according to claim 32, wherein said removable hole generating element is electrically conductive and said step of removing includes heating said removable hole generating element by flowing an electrical current through it, so as to partially melt a portion of the intermediate preform proximal to the removable hole generating element.

38. (Previously Presented) The process according to claim 37, wherein said removable hole generating element is a metal wire.

39. (Previously Presented) The process according to claim 38, wherein said metal wire is made substantially of stainless steel.

40. (Previously Presented) The process according to claim 39, wherein said removable hole generating element has a diameter between about 0.1 and 2.0 mm.

41. (Previously Presented) The process according to claim 40, wherein said removable hole generating element has a diameter between about 0.3 and 1.0 mm.

42. (Previously Presented) The process according to claim 37, further comprising heating said intermediate preform with said elongated hole at a temperature greater than the glass transition temperature T_g, at a pressure lower than about 0.2 bar, for a time sufficient to substantially remove the monomer resulting from depolymerisation in said portion of the intermediate preform proximal to the removable hole generating element.

43. (Previously Presented) The process according to claim 32, wherein said plurality of hole generating elements comprises a plurality of hole generating elements removable from said intermediate preform and wherein the process comprises removing said plurality of removable hole generating elements for forming a predetermined pattern of elongated holes in the intermediate preform.

44. (Previously Presented) The process according to claim 43, wherein the plurality of removable hole generating elements is, prior to removal of the intermediate preform from the mould, symmetrically arranged around said central axis of the mould.

45. (Previously Presented) The process according to claim 32, wherein the plurality of hole generating elements comprises one central hole generating element coaxial to said central axis of the mould.

46. (Previously Presented) The process according to clam 32, further comprising, after arranging within said mould plurality of hole generating elements, isolating the

mould from the outside and cleaning the mould by recirculating through it a liquid and filtering said liquid.

47. (Previously Presented) The process according to claim 32, wherein inserting a fluid optical polymer material or polymer precursor comprises pouring a polymer precursor in the mould and wherein consolidating the polymer compound comprises polymerising the polymer precursor.

48. (Previously Presented) The process according to claim 47, wherein said polymer precursor is one of a monomer or a prepolymer.

49. (Previously Presented) The process according to claim 32, wherein inserting a fluid optical polymer material or polymer precursor comprises pouring or injecting a molten polymer in the mould and wherein consolidating the polymer material or polymer precursor comprises cooling the molten polymer so as to solidify the polymer.

50. (Previously Presented) The process according to claim 32, wherein inserting a fluid optical polymer material or polymer precursor comprises inserting a powdered polymer in the mould and wherein consolidating the polymer material or polymer precursor comprises sintering the powdered polymer.

51. (Previously Presented) A process for producing a calibrated intermediate polymer preform for manufacturing an optical fibre, comprising:

forming an intermediate polymer preform of elongated shape having an elongation axis, the polymer having a predetermined glass transition temperature T_g;

calibrating said intermediate preform, wherein calibrating comprises:

stretching the intermediate preform during a stretching period by heating the preform at a predetermined stretching temperature above T_g and applying a tensional load (F) to the intermediate preform along its elongation axis, so as to cause its straining along the elongation axis, the stretching temperature, the tensional load and the stretching period being selected so as to impress a viscoelastic deformation to the intermediate preform;

cooling the intermediate preform to a temperature below T_g during a cooling period, while maintaining the stretched preform in tension, so as to avoid a substantial release of said viscoelastic deformation;

inserting the intermediate preform in a calibration tube having a cylindrical inner shape; and

heating the intermediate polymer preform to a calibration temperature above T_g during a calibration period sufficient to achieve a substantial release of said viscoelastic deformation.

52. (Previously Presented) The process according to claim 51, wherein heating the intermediate polymer preform to a calibration temperature is performed at a pressure lower than about 0.2 bar.

53. (Previously Presented) The process according to claim 51, wherein the stretching temperature is between about T_g + 10°C and T_g + 100°C.

54. (Previously Presented) The process according to claim 51, wherein the stretching period is between about 1 and 100 min.

55. (Previously Presented) The process according to claim 51, wherein forming an intermediate polymer preform of elongated shape comprises:

inserting a fluid optical polymer material or polymer precursor in a cylindrical mound;

consolidating the optical polymer material or polymer precursor so as to obtain a cylindrical polymer body defining the intermediate preform; and

removing the cylindrical polymer body from the mould.

56. (Previously Presented) A process for structurally modifying a polymer preform comprising sleeving a calibrated intermediate polymer preform produced according to claim 51 or 55, by applying a plastic member externally to the calibrated intermediate preform so as to obtain a sleeved preform.

57. (Previously Presented) The process according to claim 56, wherein applying a plastic member externally to the calibrated intermediate preform comprises inserting the intermediate preform in a plastic tubular member.

58. (Previously Presented) The process according to claim 56, wherein applying a plastic member externally to the calibrated intermediate preform comprises polymerising a fluid optical polymer material or polymer precursor around the calibrated intermediate preform.

59. (Previously Presented) The process according to claim 56, comprising repeating one or more times the steps of calibrating and sleeving so as to produce a final preform.

60. (Previously Presented) The process according to claim 56, further comprising drawing the sleeved preform to obtain an optical fibre.

61. (Previously Presented) The process according to claim 59, further comprising drawing the final preform to obtain an optical fibre.

62. (Previously Presented) An optical preform made by the process of any one of claims 32, 34, 37, 42, 46, 51, or 55.

63. (Previously Presented) An optical preform made by the process of claim 56.

64. (Previously Presented) An optical preform made by the process of claim 59.

65. (Previously Presented) An optical fibre made by the process of claim 60.